

Claims

1. Method for machine-executable information processing, representing information in a hierarchical data structure consisting of at least two hierarchy levels, where the structural configuration can be modeled by input means and the contents of an element can either
- 5 a) be manipulated by input means; or
b) be determined by machine-evaluating an expression, which can be manipulated by input means, said expression being able to contain a reference to at least one other element.
- 10 2. Method according to claim 1, wherein a set of pre-built sub-structures are provided by the system.
3. Method according to any one of claims 1 or 2, wherein modeling is carried out in an object-oriented way, particularly involving classes.
- 15 4. Method according to any one of claims 1 to 3, wherein parameters for the elements' representation and editing modes are manipulatable by input means.
5. Method according to claim 4, wherein multiple sets of parameters may exist per element with one of said parameters sets becoming effectual depending on the results of manipulatable expressions.
- 20 6. Method according to any one of claims 1 to 5, wherein all information, including meta information, is stored persistently, particularly in an object-oriented or relational database.
7. Method according to any one of claims 1 to 6, wherein the expression evaluation is carried out in an optimized way by
- 25 a) marking the result of an expression invalid if, and only if the expression was modified or the contents of an element referenced by the expression were modified or became invalid and
b) updating the result on an expression not until it is needed for representation or in the course of computing another result.
- 30 8. Method according to any one of claims 1 to 7, wherein the system architecture allows for a distribution of functions, which enables separate processing for
a) visualization and editing of information and meta information,
b) serving information and meta information, in particular for purposes of visualization and editing or for input and output directed at external systems,
- 35 c) parallel evaluation of expressions by means of any number of processors.

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9. Method according to any one of claims 1 to 8, wherein the expression evaluation can be extended with external (user-defined) functions.
10. Method according to any one of claims 1 to 9, wherein upon request an external process is notified about changes or invalidations of selectable structure components.
- 5 11. Software product containing components, which execute in conjunction with hardware a method according to any one of claims 1 to 10.
12. System, which is configured to be capable of executing a method according to any one of claims 1 to 11.

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